

## REMARKS

The applicants appreciate the Examiner's thorough examination of the application and request reexamination and reconsideration of the application in view of the following remarks.

### THE REJECTIONS BASED ON 35 U.S.C. §112, SECOND PARAGRAPH

The Examiner rejects claims 1-35 under 35 U.S.C. §112, second paragraph as being indefinite. The Examiner states that the recitation of “radome” in claims 1, 19, 34 and 35 is unclear, and that “the preamble language recites a radome however no structure is given to the same other than a fabric material comprising polyester polyarylate fibers in a resin matrix”. The Examiner objects to claims 2-18 and 20-33 as dependent on rejected base claims.

The applicants respectfully submit that radomes and their uses are known to those skilled in the art, in one example as enclosures for antennae. The applicants' Fig. 1 shows one example of a fabric radome such as an air-supported radome, and examples of radomes are discussed in the applicants' specification at page 6, lines 17-23. Also, in the embodiment of claim 1, for example, the applicants' claimed radome comprises flexible composite fabric material including polyester-polyarylate fibers in a flexible resin matrix material structured to increase radome strength and reduce radio frequency transmission losses through the radome.

The applicants' specification, figures and the knowledge of those skilled in the art combine to provide ample definiteness to the applicants' claimed radome structure.

With respect to the applicants' amendment (made in Response to the February 8, 2006 Office Action) to include the phrase structured to increase radome strength and reduce radio frequency transmission losses through the radome recited in claim 1, the Examiner is correct that increased radome strength and reduced radio frequency transmission losses through the radome

are accomplished by the applicants' claimed structure including polyester-polyarylate fibers.

(The issue of "inherency" raised by the Examiner is discussed below.)

Accordingly, the applicants respectfully submit that the claims are not unclear, and request that the Examiner withdraw the rejections of claims 1-35 based on 35 U.S.C. §112, second paragraph.

#### THE REJECTIONS BASED ON 35 U.S.C. §102(b) / 103(a)

The Examiner rejects claims 1-35 under 35 U.S.C. 102(b) as anticipated by, or, in the alternative, under 35 U.S.C. 103(a) as obvious over, U.S. Pat. No. 6,074,722 to *Cuccias* in view of U.S. Pat. No. 5,357,726 to *Effenberger et al.* The Examiner bases a portion of the rejections on U.S. Pat. No. 6,998,156 to *Howland*. The Examiner also states that no weight will be given to the applicant's claim of a radome because it is "preamble language".

The applicant respectfully submits that *Effenberger et al.* teaches away from the applicant's claimed invention. *Effenberger et al.* teaches a composite material which may be used for radomes, and which recognizes the problems loss of strength and light transmission in materials. In sharp contrast to the applicants' claimed invention, however, instead of teaching polyester-polyarylate fibers to increase strength and reduce radio frequency transmission losses in radomes, *Effenberger et al.* teaches a material having an improved outer film or coating to eliminate microcracks, pinholes and the like in order to reduce the adverse effects of e.g. water and dirt.

The applicants' therefore submit that *Effenberger et al.* teaches away from the applicants' claimed invention. *Effenberger et al.* is discussed in further detail below.

*Cuccias* and *Howland* fail to teach radomes at all, fail to appreciate problems encountered

in radome design, eg. the conflicting considerations of strength versus radio frequency transmission losses typically encountered by radomes, and consequently *Cuccias* and *Howland* fail to teach a solution to balance such conflicting considerations. (As discussed above the applicants' submit that the claims for a radome are sufficiently definite within the context of 35 U.S.C. §112, and as discussed below, the applicants submit that the claim for a radome cannot be discounted.)

The applicants' therefore respectfully submit that the rejection based on *Cuccias* (and *Howland*) is improper, as discussed in further detail below.

Moreover, the applicant respectfully submits that it would be improper to combine these cited references. *Effenberger et al.* mentions radomes but teaches (only) an outer film or coating to reduce adverse effects of water and dirt using (only) elements which are not claimed in the applicants' independent claims, and *Effenberger et al.* does not teach using the applicants' claimed elements to do so. *Cuccias* and *Howland* do not teach the applicants' claimed radomes at all, or using the polyester-polyarylate fibers with a radome, the results of doing so, or the advantages if and when utilized for radomes.

The applicants' therefore respectfully submit that combining these cited references to form rejections is also improper, as discussed in further detail below.

The applicants further submit that the issue of "inherency", or "inherent" properties of polyester-polyarylate fibers, does not preclude patentability. At the very least, the applicants recognized a problem and invented and are claiming a new use for polyester-polyarylate fibers, namely in a radome as claimed. None of the cited references teach or suggest such a use as claimed by the applicants, or the effects thereof.

The Examiner states in pertinent part that *Cuccias* discloses a laminate material suitable for use as the wall of a pressurized container like those used in lighter than air vehicles (i.e. blimps), that the multilayered laminate may be comprised of multiple woven or knitted layers and that fabrics may be made from high strength yarns like VECTRAN<sup>TM</sup> (polyester polyarylate), and that the fabric layers or plies may be encapsulated in a flexible resin matrix, preferably polyurethane.

The Examiner further states that:

With respect to the claim limitation of the composite being “structured to increase the radome strength and reduce radio frequency transmission losses through the radome”, it is the position of the Examiner that, it is reasonable to presume that this property is inherent to the composite of *Cuccias/Effenberger et al.* Support for said presumption is found in the use of like materials (i.e. VECTRAN<sup>TM</sup> fibers encapsulated in a polyurethane resin matrix, and made into a multiply composite having an outer skin layer which both structurally and chemically are similar to that of Applicant’s). The burden is upon Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In addition the presently claimed property of increasing the radome strength and reducing radio frequency transmission losses through the radome, would obviously have been present one the *Cuccias / Effenberger et al.* product is provided.

It should be noted, as set forth in the 112-2 rejection the preamble language of radome is not given any weight as no specific structure or criticality has been shown in the claims. However, such fabric systems are known to be used in the same art of endeavor. Evidence of this can be seen in the background section of USPN 6998156 [Summary of Invention].

The term “radome” in the applicants’ claims is not a preamble to introduce what the applicants are claiming, but indeed the applicants are claiming a radome, which is comprised of the claimed features. “Reducing the claimed invention to an ‘idea’, and then determining the patentability of that ‘idea’ is error ... Analysis properly begins with the claims for they measure

and define the invention.” See e.g. *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021, 1024 (Fed. Cir. 1984) (with citations omitted).

The applicants are clearly claiming a radome (independent claims 1 and 35), a flexible fabric radome (independent claims 17 and 18), an air-supported flexible fabric or stretched membrane radome (independent claim 34), and a method of producing a flexible fabric radome (independent claim 19). As discussed above with respect to the rejections under 35 U.S.C. §112, second paragraph, radomes are known to those skilled in the art and sufficiently well-described in the applicants’ specification.

Therefore, the applicants respectfully submit that the recitation of a radome as claimed by the applicants cannot be discounted as “preamble language” in order to reject the claims over prior art (*Cuccias* and *Howland*) which clearly does not recognize the conflict between radome strength and radio frequency transmission, does not teach or suggest the applicants’ claimed elements in association with a radome, nor the problems solved thereby. Moreover, whether or not the *Cuccias* material may possess “inherent properties”, the applicants’ use of polyester-polyarylate fibers in a radome as claimed is not taught or suggested by *Cuccias*. Such a use is a new use for such fibers with such properties and new uses are patentable. See e.g. U.S. Pat. No. 6,033,676, where an ointment for cows had the “inherent” property to reduce baldness, and despite this inherent property a patent was granted for the new use of the ointment for restoring hair growth.

*Effenberger et al.* teaches away from the applicants’ claimed invention. *Effenberger et al.* recognized that hydrophobicity (repelling of water) is one key to microwave or light transmission, and that dirt and microbiological growth can take hold in microcracks, craters, pinholes etc. in a material causing hydrophobicity to deteriorate and comprising the effective

strength of the composite. See e.g. *Effenberger et al.* column 1, line 61 – column 2, line 14, and column 2, lines 28-35. *Effenberger et al.* does not teach or suggest altering the composition of the material itself. Instead, in order to solve the problem of reduced hydrophobicity and strength caused by microcracks and the like, *Effenberger et al.* teaches the use of a PFE polymer outer film or coating. *Effenberger et al.* does not teach or suggest strengthening the material itself, or changing the material itself to facilitate transmission of radio waves, or polyester-polyarylate fibers, all in sharp contrast to the applicants' claimed invention.

Furthermore, it would be improper to combine these cited references. *Effenberger et al.* mentions radomes but teaches (only) an outer film or coating to reduce adverse effects of water and dirt using (only) elements which are not claimed in the applicants' independent claims, and *Effenberger et al.* does not suggest using the applicants' claimed elements to do so. *Cuccias* and *Howland* do not suggest the applicants' claimed radomes at all, or using the polyester-polyarylate fibers with a radome, the results of doing so, or the advantages.

The law is clear that "one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention". See e.g. *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988).

### CONCLUSION

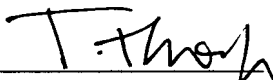
Accordingly, the applicants respectfully submit that for at least the foregoing reasons, the applicants' claims are not indefinite, and are not anticipated nor obvious over the cited references.

Each of Examiner's rejections has been addressed or traversed. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1-35 based on

*Howland.* Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates, collect in Waltham, Massachusetts at (781) 890-5678.

Respectfully submitted,

  
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